

Appl. No. 10/743,861
Reply dated May 5, 2006
Reply to Office Action of December 5, 2005

Listing of the Claims:

1. (currently amended) A die adapted for extruding a plurality of meltblown multicomponent filaments, the meltblown multicomponent filaments comprising at least two different thermoplastic resins arranged in a multicomponent structure, wherein the die comprises:
a first surface that comprises a first plurality of orifices of a first diameter ~~for receiving a multicomponent structure~~ wherein each of the first plurality of orifices extend from the first surface to a first conduit that extends in the interior of the die ~~to convey the multicomponent thermoplastic structure in to the interior of the die~~ to a capillary having a diameter smaller than the first diameter and then to a die opening wherein the first plurality of conduits define a first plane;
the first surface further comprises a second plurality of orifices of the first diameter ~~for receiving a multicomponent structure~~ wherein each of the second plurality of orifices extend from the first surface to a second conduit that extends in the interior of the die ~~to convey the multicomponent thermoplastic structure in to the interior of the die~~ to a capillary having a diameter smaller than the first diameter and then to a die opening wherein the second plurality of conduits define a second plane, wherein the first plurality of orifices and first conduits alternate with the second plurality of orifices and second conduits;
wherein the first plane and the second plane are not coplanar and intersect at an angle α ~~and the first plurality of conduits and the die openings are adapted to extrude meltblown fibers.~~
2. (canceled)
3. (original) The die of Claim 1 wherein the average diameter of the die openings ranges from about 0.07 millimeters to about 0.7 millimeters.

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4. (original) The die of Claim 1 wherein the average diameter of the die openings ranges about 0.3 millimeters to about 0.4 millimeters.
5. (original) The die of Claim 1 wherein the angle α ranges from about 10° to about 50° .
6. (original) The die of Claim 1 wherein the angle α ranges from about 20° to about 40° .
7. (original) The die of Claim 1 wherein the angle α ranges from about 30° to about 40° .
8. (original) The die of Claim 1 wherein each of the first conduits that extends in the interior of the die connects to a first conduit of reduced diameter that connects to a capillary, wherein the reduced diameter of the conduits of reduced diameter is less than the first diameter of the first conduits and greater than or equal to the diameter of the capillary and the second conduits that extends in the interior of the die connects to a second conduit of reduced diameter that connects to a capillary, wherein the reduced diameter of the conduits of reduced diameter is less than the first diameter of the first conduits and greater than or equal to the diameter of the capillary.
9. (original) The die of Claim 5 wherein the first conduits of reduced diameter are coplanar with the first conduits and the second conduits of reduced diameter are coplanar with the second conduits.
10. (original) The die of Claim 1 wherein each of the first plurality of orifices converges to and is in fluid communication with a capillary and each of the second plurality of orifices converges to and is in fluid communication with a capillary wherein the capillaries define a third plane that is intermediate the first plane and the second plane.

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11. (original) The die of Claim 1 wherein the die openings are linearly arranged.
12. (original) The die of Claim 1 comprising at least 20 die openings per inch.
13. (currently amended) A die tip adapted for extruding a plurality of meltblown multicomponent filaments, the meltblown multicomponent filaments comprising at least two different thermoplastic resins arranged in a multicomponent structure, wherein the die tip comprises:
a first series of first conduits of a first diameter that extend in the interior of the die tip
~~to convey a multicomponent thermoplastic structure in to the interior of the die tip,~~
a second series of second conduits of the first diameter that extend in the interior of the die tip~~to convey the multicomponent thermoplastic structure in to the interior of the die tip,~~
wherein the first series of conduits and the second series of conduits converge toward and connect to a series of capillaries ~~for conveying the multicomponent structure to die openings for extruding fibers~~ wherein the capillaries each have a diameter smaller than the first diameter, and
each conduit connects to a capillary and each capillary connects to a die opening
~~wherein capillary that connects to a first conduit is not adjacent another conduit that connects to a first capillary~~ a capillary that connects to a first conduit is adjacent to a capillary that connects to a second conduit.
14. (canceled)
15. (original) The die tip of Claim 13 wherein a capillary that connects to a first conduit is between adjacent capillaries that connects to second conduits.

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16. (original) The die tip of Claim 13 wherein a capillary that connects to a first conduit is between an adjacent capillary that connects to a second conduit and an adjacent capillary that connects to conduit that is not coplanar with the first series of series of conduits or the second series of conduits.
17. (original) The die tip of Claim 13 wherein the average diameter of the die openings ranges from about 0.07 millimeters to about 0.7 millimeters.
18. (original) The die tip of Claim 13 wherein the average diameter of the die openings ranges about 0.3 millimeters to about 0.4 millimeters.
19. (original) The die of Claim 1 comprising at least 20 die openings per inch.
20. (original) The die of Claim 1 comprising at least 30 die openings per inch.